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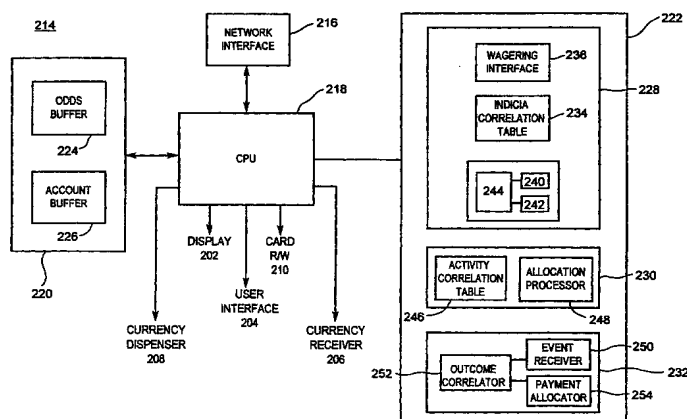
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(54) Title: **WAGERING SYSTEM**



(57) **Abstract:** A wagering system includes a wagering processor, a bet allocator in communication with the wagering processor, and a payout processor in communication with the wagering processor. The wagering processor is configured to process wagers received from wagers on wagering events, with each wager including a predicted outcome of at least one of the events and a bet amount associated with the predicted outcome. The bet allocator is configured to allocate each bet amount amongst at least one of a plurality of parimutuel betting pools in accordance with the associated predicted outcome. Preferably, the wagering events are race events, and the wagering processor is configured to associate game activity indicia with participants of the racing events, and to determine the predicted outcomes from indicia selections and the rules associated with the game activities. Preferably, the bet allocator is configured to associate each betting pool with an outcome of one of the activities, and to allocate each bet amount amongst the betting pools in accordance with the probability of occurrence of each associated activity outcome.

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## WAGERING SYSTEM

## FIELD OF THE INVENTION

5 The present invention relates to a parimutuel betting system. In particular, the present invention relates to a betting and gaming system and method which simplifies the placement of parimutuel wagers on race events.

## BACKGROUND OF THE INVENTION

10 Wagering on racing events, such as horse races and dog races, typically takes the form of either fixed odds wagering or parimutuel wagering. Fixed odds wagering is a system by which the return for a particular wager is determined in accordance with the payout odds assigned to the associated bet. Fixed odds wagering is popular from the perspective of wager recipients (eg. betting parlours) since it places a limit on the magnitude of the payout in the event of a win. Fixed odds wagering is also  
15 popular from the perspective of wagerers since it provides a measure of certainty on the possible payout. However, as the odds assigned to a particular bet can diminish as the total amount wagered increases, fixed odds wagering is not be particularly attractive to some wagerers since the payout odds for their bet may diminish in the minutes before the start of the sporting event.

20 Parimutuel wagering is a system by which a wagering pool is established for the receipt of bets, and the proceeds of the pool are divided amongst holders of winning tickets in accordance with the number of winning ticket holders and the magnitude of each wager. Parimutuel wagering is popular from the perspective of the wager recipients (eg. race track owners), since the recipient typically receives a fixed  
25 percentage of each amount bet prior to the payout to the winning ticket holders. Also, parimutuel wagering is popular from the perspective of the wagerer since the return on a particular bet is proportional to the size of the wagering pool and, therefore, can exceed the fixed odds return of the bet. However, parimutuel wagering also suffers from a number of disadvantages.

30 Firstly, parimutuel wagering requires a knowledge of betting terminology (eg. win, place, show, triactor, exactor). Secondly, parimutuel wagering requires the wagerer to be conversant with betting forms, and to have knowledge of race

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contestant handicapping. Since these factors act as an impediment to the placement of bets, and therefore limit the revenue experienced by wager recipients, attempts have been made to improve on the conventional parimutuel wagering systems to encourage wagerers to place wagers on race events.

5           For instance, Goldberg (US 5,374,060) teaches a method of wagering which expands upon the number of wagering opportunities available for racetrack betting. The method taught by Goldberg involves providing wagerers with wagering cards configured with small circles corresponding to the desired contestant for each of a plurality of races. Each wagering card allows “win”-type wagering, “place”-type  
10   wagering, “show”-type wagering, or “win, place, show”-type wagering. Each wagerer selects desired contestants for each race and tenders the completed card to a bet collector. The wagerer also tenders a bet which is included in the purse associated with the wager type. The purse available for payment for each wager type is then divided equally amongst winning card holders. Typically, payoffs are paid to  
15   wagerers who select all or a portion of the correct winning contestants for their wager type.

          Haddad (US 5,743,525) teaches a sporting event parimutuel wagering system which facilitates wagering without requiring significant wagering knowledge by the wagerer. The wagering system taught by Haddad involves first assigning race  
20   participants a unique number. Then, wagerers place wagers on the race participants by selecting one or more of the numbers and paying a bet amount. At the end of the race event, the numbers associated with the first three horses are added together, and the total is then compared with the sum of the numbers selected by each wagerer. Wagerers whose sums match the calculated total share in the proceeds of the pool  
25   associated with the race event.

[       Weingardt (US 5,275,400) teaches an electronic gaming system which provides an electronic video poker game, an electronic slot game, an electronic blackjack game or an electronic craps game . The gaming system accepts one of a plurality of different bet amounts, and establishes a separate parimutuel wagering pool  
30   associated with each allowed bet amount, with the allocation of each bet to the wagering pools being determined in accordance with a formula based on the amount bet. The gaming system provides a payout to a winning player from the wagering

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pool corresponding to the amount bet, and to encourage the placement of larger-sized bets the payout amounts increase with the amount bet.]

Although the race event parimutuel betting systems taught by Goldberg and Haddad offer improvements over the conventional race event parimutuel betting systems, they are limited in their ability to enhance revenue for wager recipients. For instance, wagerers of Goldberg's wagering system must still have knowledge of betting terminology. Neither Goldberg nor Haddad increase the available wagering opportunities significantly beyond those available with conventional race event parimutuel betting systems. Also, the betting interfaces suggested by Goldberg and Haddad do little to attract and maintain the attention of novice wagerers. [Although Weingardt offers improvements over the betting systems taught by Goldberg and Haddad, Weingardt only allows wagering on the particular game implemented by the electronic gaming system and, therefore would not be suitable for encouraging wagering on race events.] Therefore, there remains a need for a parimutuel betting and gaming system which encourages wagering on race events.

## SUMMARY OF THE INVENTION

According to the invention, there is provided a wagering system and a method for facilitating wagering on race events, which addresses deficiencies of the prior art.

The wagering system, according to the present invention, includes a wagering processor, a bet allocator in communication with the wagering processor, and a payout processor in communication with the wagering processor. The wagering processor is configured to process wagers received from wagerers on wagering events, with each wager including a predicted outcome of at least one of the events and a bet amount associated with the predicted outcome. The bet allocator is configured to allocate each bet amount amongst at least one of a plurality of parimutuel betting pools in accordance with the associated predicted outcome. The payout processor is configured to facilitate payouts from the betting pools to winning ones of the wagerers in accordance with the predicted outcomes and actual outcomes of the events.

The method for facilitating wagering includes the steps of (1) receiving wagers from wagerers on wagering events, each said wager including a predicted outcome of at least one of the events and a bet amount associated with the predicted outcome; (2)

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allocating each said bet amount amongst at least one of a plurality of parimutuel betting pools in accordance with the associated predicted outcome; and (3) paying out credit amounts from the betting pools to winning ones of the wagerers in accordance with the predicted outcomes and actual outcomes of the events.

5           In accordance with a preferred implementation of the invention, the wagering processor includes an indicia correlation table associating indicia with participants of racing events. Preferably, each indicia is associated with a game activity having rules for the performance thereof, which rules are previously well known to the wagerer. Preferred rules include rules for playing BINGO, BLACKJACK and CRAPS. The  
10       wagering processor also includes a wagering interface for providing the wagerers with a template for facilitating performance of one of the activities in accordance with the associated rules and for receiving an indicia selection via the template, and an indicia processor in communication with the wagering interface and the indicia correlation table for deriving the predicted outcomes from the indicia selections in accordance  
15       with the rules.

          Typically, each wagering event has a plurality of possible event outcomes, and each activity has a plurality of possible activity outcomes. Preferably, the indicia processor includes an event outcome predictor for determining the event outcome probability associated with each possible event outcome, an activity outcome  
20       predictor for determining the activity outcome probability associated with each possible activity outcome, and a probability correlator in communication with the event outcome predictor and the activity outcome predictor for deriving the predicted outcomes of the events from the event outcome probabilities and the activity outcome probabilities.

25           The bet allocator includes an activity correlation table associating each said betting pool with one of the activity outcomes, and an allocation processor in communication with the activity correlation table for allocating each bet amount amongst the betting pools in accordance with the associated activity outcome probabilities. The payout processor includes an event outcome receiver for receiving  
30       indications of the actual outcomes, an outcome correlator in communication with the event outcome receiver for identifying the winning wagerers from the received indications and the predicted outcomes, and a payout allocator in communication with

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the outcome correlator for allocating the credit amounts amongst the respective winning wagers in accordance with each respective predicted outcome.

#### BRIEF DESCRIPTION OF THE DRAWINGS

5           The preferred embodiment of the invention will now be described, by way of example only, with reference to the drawings, in which:

Fig. 1 is a schematic diagram of the wagering network, according to the present invention, depicting the wagering facilities, the wagering systems, and the communications network;

10           Fig. 2 is a schematic view of the wagering system shown in Fig. 1, depicting the multimedia display, the user interface, the currency receiver, the currency dispensing device, and the card read/write device;

Fig. 3 is a schematic diagram of further details of the wagering system shown in Fig. 2, depicting the wagering processor, the bet allocator, and the payout processor;

15           Fig. 4 is a schematic view of a sample BINGO game activity card implemented by the wagering system for placing wagers; and

Figs. 5a, 5b, and 5c comprise a flow chart describing the wagering steps facilitated by the wagering system.

#### 20           DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning to Fig. 1, a wagering network, denoted generally as 100, is shown comprising a plurality of wagering facilities 102, a plurality of wagering systems 200, and a communications network 104 for facilitating communication between the wagering facilities 102 and the wagering systems 200. Preferably, the communications network 104 comprises a closed network, however the communications network 104 may instead comprise an open network, such as the Internet, if the open network has sufficient bandwidth for adequately servicing the wagering systems 200. Further, typically the communications network 104 is a land-based network, however the communications network 104 may instead comprise a wireless communications network.

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Typically, each wagering facility 102 is associated with one or more race tracks, and provides the wagering systems 200 with racing information, such as the names and post positions of the race candidates (eg. horse, dog) running in each race event at each associated race track. The wagering facilities 102 also provide the  
5 wagering systems 200 with odds information for each race candidate, and betting pool information on the size of each betting pool.

As shown in Fig. 2, the wagering system 200 comprises a display 202 for displaying information concerning an activity, a user interface 204 for placing wagers on the activity in accordance with an associated set of rules, a currency receiver 206  
10 for receiving paper currency, a currency dispensing device 208 for dispensing cash winnings, a card read/write device 210 for receiving an electronic or magnetic-stripe card for retaining account information, and a housing 212 for retaining the display 202, the user interface 204, the currency receiver 206, the currency dispensing device 208, and the card read/write device 210. Preferably, the activities displayed by the  
15 display 202 are game activities the rules for which are commonly known, such as BLACKJACK, CRAPS, ROULETTE, POKER and BINGO. Other activities will be apparent to those of ordinary skill.

Typically, the electronic or magnetic-stripe card is issued by a betting parlour in which the wagering system 200 is located, and is encoded with information  
20 identifying the wagerer's account balance. As will become apparent, the currency receiver 206 and the card read/write device 210 provide alternate mechanisms for crediting the wagerer's account, and the currency dispensing device 208 and the card read/write device 210 provide alternate mechanisms for facilitating a payout for a winning wager.

Preferably, the display 202 includes a CRT display 202a for displaying a video image of the game activity, and a speaker 202b for playing an audio accompaniment to the video image. The user interface 204 is provided to allow wagerers to enter wagers on the game activity and to initiate a cash payout of the wagerer's winnings. Preferably, the user interface 204 is implemented as a keyboard separate from the  
30 CRT display 202a, however the user interface 204 may also be implemented as a touch sensitive membrane provided on the surface of the CRT display 200a if desired. The wagering system 200 also includes a data processor 214 (discussed below) in

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communication with the display 202, the user interface 204, the currency receiver 206, the currency dispensing device 208, and the card read/write device 210 for facilitating wagering on the game activity.

It should be understood that the configuration shown in Fig. 2 is only one implementation of the wagering system 200, and that other configurations are also envisaged. For instance, in one variation, not shown, the wagering system 200 excludes the currency receiver 206 and the currency dispensing device 208, and maintains the card read/write device 210 as the sole means for receiving wagers and for providing payouts. In another variation, not shown, the card read/write device 210 is configured to receive wagers on game cards. In this variation, the wagerer may be provided with a game card, such as a bingo card, which has a Universal bar code and indicia preassigned on the card, and the card read/write device 210 is configured to obtain the wagerer's wager by reading the Universal bar code. Alternately, the wagerer may be provided with a blank game card which allows the wagerer to enter the desired indicia on the card, such as with pencil, and the card read/write device 210 is configured to read and identify the pencilled indicia. Other configurations of the wagering system 200 will be apparent to those of ordinary skill.

As shown in Fig. 3, the data processor 214 comprises a network interface 216 for communicating with the wagering facilities 102 over the communications network 104, and a central processing unit (CPU) 218 in communication with the display 202, the user interface 204, the currency receiver 206, the currency dispensing device 208, the card read/write device 210, and the network interface 216. The data processor 214 also includes a non-volatile memory (NVM) 220 and a volatile memory (RAM) 222 in communication with the CPU 218.

The NVM 220 includes an odds buffer 224 for receiving odds data from the wagering facilities 102, and an account buffer 226 for recording the monetary value of funds in the wagerer's's wagering account. The NVM 220 also includes processor instructions for the CPU 218 which establish in the RAM 222 a memory object defining a wagering processor 228, a memory object defining a bet allocator 230, and a memory object defining a payout processor 232.

The wagering processor 228 is configured to process wagers received from wagerers on the racing events, with each wager including a predicted outcome of at



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least one of the racing events and a bet amount associated with the predicted outcome. However, the wagering processor 228 does not directly receive wagers on the race events, but instead receives wagers or outcome predictions on the outcome of the activity displayed on the display 202 and converts the outcome predictions to wagers on race candidates of the race events. To effect the conversion between activity outcome predictions and race candidate wagers, the wagering processor 228 includes an indicia correlation table 234 which includes records associating activity indicia with each race candidate of the race events.

The wagering processor 228 also includes a wagering interface 236 for receiving indicia selections from wagerers using the wagering system 200, and an indicia processor 238 in communication with the wagering interface 236 and the indicia correlation table 234 for deriving wagers on the race events from the indicia selections in accordance with the associated activity rules. The indicia processor 238 includes an event outcome predictor 240 for determining the probability of occurrence of each race event outcome, an activity outcome predictor 242 in communication with the indicia correlation table 234 for determining and providing the indicia correlation table 234 with probability data of the occurrence of each activity outcome, and a probability correlator 244 in communication with the event outcome predictor 240 and the activity outcome predictor 242 for deriving wagers (ie. predicted outcomes) on the race events from the event outcome probabilities and the activity outcome probabilities.

The indicia correlation table 234 includes records associating activity indicia with each race candidate of the race events. Preferably, the indicia listed in the indicia correlation table 234 are associated with the race candidates in accordance with their respective probability of occurrence. Specifically, since the odds information associated with each race candidate will often suggest that at least one of the race candidates will be more likely to win than other race candidates, and since at least one of the activity outcomes will be more likely to occur than other activity outcomes, preferably each race candidate listed in the indicia correlation table 234 is associated with one or more indicia in accordance with the odds associated with each respective race candidate and the probability of occurrence of each activity outcome.

As an example, if the wagering system 200 is configured to play CRAPS, then there are only 11 possible activity outcomes which can be displayed at the wagering interface 236, each having the following outcome probabilities:

5	<b><u>Activity Outcome</u></b>	<b><u>Indicia Required</u></b>	<b><u>Probability of Occurrence</u></b>
	2	1,1	1/36
	3	1,2; 2,1	2/36
	4	1,3; 2,2; 3,1	3/36
	5	1,4; 2,3; 3,2; 4,1	4/36
10	6	1,5; 2,4; 3,3; 4,2; 5,1	5/36
	7	1,6; 2,5; 3,4; 4,3; 5,2; 6,1	6/36
	8	2,6; 3,5; 4,4; 5,3; 6,2	5/36
	9	3,6; 4,5; 5,4; 6,3	4/36
	10	4,6; 5,5; 6,4	3/36
15	11	5,6; 6,5	2/36
	12	6,6	1/36

Accordingly, in one implementation of the invention, the wagering interface 236 is configured to depict a CRAPS table template on the CRT display 202a and the user interface user interface 204 is configured for receiving CRAPS wagers. Each race event has only six race candidates, and the race candidate having the highest probability of winning is associated in the indicia correlation table 234 with indicia {1,6; 2,5; 3,4; 4,3; 5,2; 6,1} (activity outcome 7), the race candidate having the next highest probability of winning is associated in the indicia correlation table 234 with indicia {1,5; 2,4; 2,6; 3,3; 3,5; 4,2; 4,4; 5,1; 5,3; 6,2} (activity outcomes 6, 8) and so on, with the race candidate having the lowest probability of winning being associated in the indicia correlation table 234 with indicia {1,1; 6,6} (activity outcomes 2, 12). Alternately, since there are 36 possible activity outcomes from a die pair throw, in a race event having only nine race candidates, in another implementation of the invention each race candidate listed in the indicia correlation table 234 is associated with 4 different indicia without regard to the associated probabilities of occurrence.

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In another implementation of the invention, the wagering interface 236 is configured to depict a BINGO game card template on the CRT display 202a using, for example, the game activity card 300 shown in Fig. 4. As shown therein, the game activity card 300 includes a plurality of game columns 302, and a plurality of game rows 304 intersecting with the game columns 302 to define a plurality of cells, each including a game indicia 306. In accordance with this latter implementation, each race candidate listed in the indicia correlation table 234 is uniquely associated with one of the game indicia 306 denoted on the game activity card 300, without regard to the associated probabilities of occurrence.

With the indicia association scheme provided by the BINGO activity game card 300, selection of the indicia in any particular column can correspond to the wagerer predicting the first, second, third and fourth race candidates (ie a SUPERFECTA wager) in a given race event. Further, depending upon whether the associated betting pools are allowed for the race event, selection of the indicia in any particular column can also (or instead) correspond to the wagerer predicting the first race candidate (ie a TO WIN wager); and/or the first and second race candidates (ie. an EXACTOR wager); and/or the first, second and third race candidates (ie. a TRIACTOR wager). Also, selection of the indicia in any particular column can also (or instead) correspond to the wagerer selecting a race candidate to finish first or second (ie. a PLACE wager); or the wagerer selecting a race candidate to finish first, second or third (ie. a SHOW wager). Selection of the indicia in any particular row can correspond, for example, to the wagerer predicting the winner in 6 race events (ie. a PICK 6 wager); or the wagerer predicting the winner in 5 race events (ie. a PICK 5 wager). Selection of all the indicia can correspond to the winner placing a SUPERFECTA wager (ie. a PICK ALL wager) in all the race events. Other indicia association schemes will be apparent, and are encompassed by the present invention.

Preferably, the bet allocator 230 is configured to allocate each amount bet amongst at least one of a plurality of parimutuel betting pools in accordance with the probability of occurrence of each outcome prediction provided by the wagering processor 228. For instance, if the wagering system 200 is configured to play BINGO using, for example, the game activity card 300 shown in Fig. 4, with each race candidate listed in the indicia correlation table 234 being uniquely associated with one

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of the game indicia 306 marked on the game activity card 300, then each set of column or row of game indicia 306 can be associated with one or more race candidate wager types (eg. WIN, PLACE, SHOW, EXACTOR, TRIACTOR, SUPERFECTA). Since a SHOW wager has the highest probability of success (followed in decreasing probability of success by a PLACE wager, a WIN wager, an EXACTOR wager, a TRIACTOR wager, a SUPERFECTA wager, a PICK 5 wager, a PICK 6 wager, and a PICK ALL wager), the bet allocator 230 would allocate, for example, 20% of the amount bet to a SHOW betting pool, 20% to a PLACE betting pool, 15% to a WIN betting pool, 10% to an EXACTOR betting pool, 9% to a TRIACTOR betting pool, 8% to a SUPERFECTA betting pool, 7% to a PICK 5 betting pool, 6% to a PICK 6 betting pool, and 5% to a PICK ALL betting pool. As will be appreciated from the foregoing example, the allocation of the bet amount amongst the betting pools need not coincide exactly with the probability of occurrence of each activity outcome.

On the other hand, since CRAPS has only 6 different probability levels, the bet allocator 230 would only allocate the bet amount amongst 6 different betting pools, for example the WIN, PLACE, SHOW, EXACTOR, TRIACTOR, and SUPERFECTA betting pools. As will be apparent, the allocation of the bet amount amongst these 6 betting pools would result in a different distribution than that described above for BINGO.

To allocate each amount bet, as described above, the bet allocator 230 includes an activity correlation table 246 which includes records associating the betting pools with the possible activity outcomes of the activity implemented by the wagering interface 236. The records of the activity correlation table 246 also specify the probability of occurrence (ie. the probability of a wagerer receiving a payout from the respective betting pool) associated with each betting pool. The bet allocator 230 also includes an allocation processor 248 in communication with the activity correlation table 246 for determining and providing the activity correlation table 246 with the probability data for each betting pool, and for allocating each amount bet amongst the betting pools in accordance with the probability of occurrence of each activity outcome.

The activity correlation table 246 includes records associating the betting pools with outcomes of the activity. Preferably, the betting pools listed in the activity

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correlation table 246 are associated with the activity outcomes in accordance with the probability of occurrence of each activity outcome. For instance, in one implementation of the invention, the wagering interface 236 is configured to depict a CRAPS table template on the CRT display 202a, and the wagering facilities 102

5 establish 6 parimutuel betting pools for each wagering system 200 configured for playing CRAPS, with activity outcome 7 being associated in the activity correlation table 246 with the first betting pool, activity outcomes 6, 8 being associated in the activity correlation table 246 with the second betting pool, and so on, with activity outcomes 2, 12 being associated in the activity correlation table 226 with the sixth

10 betting pool.

Alternately, since there are 11 unique activity outcomes in CRAPS {2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12}, in another implementation of the invention the wagering facilities 102 establish 11 parimutuel betting pools for each wagering system 200 configured for playing CRAPS, with each betting pool being associated in the activity

15 correlation table 246 with a respective one of the activity outcomes without regard to the associated probabilities of occurrence. In this variation, preferably the bet allocator 230 allocates the bet amount equally amongst all 11 betting pools.

In yet another implementation, the wagering interface 236 is configured to depict a BINGO game card template on the CRT display 202a using, for example, the

20 game activity card 300 shown in Fig. 4. In accordance with this latter implementation, the wagering facilities 102 establish a first set of parimutuel betting pools each associated in the activity correlation table 246 with the completion of a respective column 302 on the game activity card 300, another set of parimutuel betting pools each associated in the activity correlation table 246 with the completion

25 of a respective row 304 on the game activity card 300, and another parimutuel betting pool associated in the activity correlation table 246 with completion of the entire game activity card 300.

In this implementation, the completion of a single column 302 of the game activity card 300 equates to correctly predicting the first, second, third and fourth race

30 candidate in any race event (ie. a SUPERFECTA wager), the completion of a single row 304 of the game activity card 300 equates to correctly predicting the first (second, third or fourth) race candidate in all the race events, and the completion of the entire

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game activity card 300 equates to correctly predicting the first, second, third and fourth race candidate in all the race events (ie. a PICK ALL wager). Due to the relatively low probability of a novice wagerer correctly completing any single column 302 or row 304 of the game activity card 300, the wagering facilities 102 also

5 establish a set of parimutuel betting pools each associated in the activity correlation table 246 with the completion of the first two cells of game indicia 306 of a respective column 302 on the game activity card 300 (ie. an EXACTOR wager), and a set of parimutuel betting pools each associated in the activity correlation table 246 with the completion of the first three cells of game indicia 306 of a respective column 302 on

10 the game activity card 300 (ie. a TRIACTOR wager). Also, the wagering facilities 102 also establish a parimutuel betting pool associated in the activity correlation table 246 with the completion of five of the cells in the first row of the game indicia 306 (ie. a PICK 5 wager), and a parimutuel betting pool associated in the activity correlation table 246 with the completion of five of the cells in the first row of the

15 game indicia 306 (ie. a PICK 6 wager).

In still another implementation, the wagering system 200 is again configured for playing BINGO using, for example, the game activity card 300 shown in Fig. 4. In accordance with this latter implementation, the wagering facilities 102 establish a first parimutuel betting pool associated in the activity correlation table 246 with the

20 correct identification of all 24 indicia, a second parimutuel betting pool associated in the activity correlation table 246 with the correct identification of between 20 and 23 indicia, a third parimutuel betting pool associated in the activity correlation table 246 with the correct identification of between 16 and 19 indicia, a fourth parimutuel betting pool associated in the activity correlation table 226 with the correct

25 identification of between 12 and 15 indicia, and a fifth parimutuel betting pool associated in the activity correlation table 246 with the correct identification of between 8 and 11 indicia. To account for the possibility that the requirement for payout of any particular betting pool is not satisfied, the wagering facilities 102 also establish a sixth parimutuel betting pool which is associated in the activity correlation

30 table 246 with the greatest number of correctly identified indicia. Preferably, the sixth parimutuel betting pool receives the betting amounts allocated to the betting pool for

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which the payout requirements were not met. Other betting pool association schemes will be apparent, and are encompassed by the present invention.

The payout processor 232 is configured to facilitate payouts from the betting pools to the winning wagerers in accordance with the predicted outcomes and the actual outcomes of the events. To effect this result, the payout processor 232 comprises an event outcome receiver 250 for receiving data on the actual event outcomes, an outcome correlator 252 in communication with the event outcome receiver 250 for identifying the winning wagerers from the received outcome data and the predicted outcomes, and a payout allocator 254 in communication with the outcome correlator 252 for allocating credit amounts (ie a portion of the bet amounts deposited in a particular betting pool) from each betting pool amongst the winning wagerers who had a portion of their bet amounts deposited in the particular betting pool. The payout allocator 254 is in communication with the currency receiver 206, the currency dispensing device 208, the card read/write device 210, and the account buffer 226, and is configured for crediting the wagerer's wagering account with money received by the currency receiver 206. The payout allocator 254 is also configured to credit the account of the wager using the wagering system 200 with any credits stored on the electronic/magnetic-stripe card which is inserted in the card read/write device 210, and to update the wagerer's wagering account in accordance with the amount wagered and the outcome of the wager.

A preferred embodiment of the process implemented by the wagering network 100, and the wagering system 200 in particular, will now be described with reference to Fig. 5. At step 400, the wagering facilities 102 transmit racing information, such as the names and post positions of the race candidates in each race event, start time information for each race event, and odds information for each race candidate. Each wagering system 200 receives the information over the communications network 104 and, at step 402, displays a game activity template on the display 202 together with the time remaining until the start of the next race event. The term "wagering period" will be used hereafter to denote the period immediately preceding the start of a race event during which wagers may be received. Each wagering system 200 stores the received odds information in the odds buffer 224.

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At step 404, the payout processor 232 determines whether the wagerer has deposited money into the currency receiver 206, or has inserted an electronic/magnetic-stripe wagerer's card into the card read/write device 210, thereby establishing a wagering account in the account buffer 226. In one variation, the  
5 wagering system 200 is in communication with banking computers and the payout processor 232 establishes a wagering account by electronically transferring funds from the wagerer's bank account, after the wagerer provides the payout processor 232 with the appropriate PIN and bank account number, via the user interface 204.

If no wagering account has been established, the wagering system 200  
10 continues to display the game activity template and the time remaining at step 402. On the other hand, if a wagering account has been established, at step 406 the payout processor 232 determines whether the wagering period has expired. If the payout processor 232 determines that the wagering period has expired, the wagering system 200 continues to display the game activity template and the time remaining until start  
15 of the next wagering period at step 402.

If the payout processor 232 determines that the wagering period has not expired, at step 408 the payout processor 232 waits for a bet amount and an indicia selection to be entered via the user interface 204 and the wagering interface 236. As will be appreciated, the wagering interface 236 ensures that the indicia selected by the  
20 wagerer comply with the rules associated for performing the game activity displayed by the wagering system 200. Once a bet amount is selected, at step 410 the payout processor 232 again determines whether the wagering period has expired. If the payout processor 232 determines that the wagering period has expired, the wagering system 200 continues to display the game activity template and the time remaining  
25 until start of the next wagering period at step 402. On the other hand, if the payout processor 232 determines that the wagering period has not expired, at step 412 the payout processor 232 queries the account buffer 226 to determine whether the wagerer has sufficient funds in its wagering account for the amount bet. If the payout processor 232 determines that the wagering account does not have sufficient funds for  
30 the amount bet, the payout processor 232 displays a message on the display 202, requesting that the wagerer insert more funds or place a smaller bet. The payout processor 232 then waits for a new wager at step 408.



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If the payout processor 232 determines that the wagering account does have sufficient funds for the bet, the indicia processor 238 of the wagering processor 228 queries the indicia correlation table 234 with the indicia selection received by the wagering interface 236 to determine at least one predicted outcome for the race events. To do so, the activity outcome predictor 242 of the indicia processor 238 first calculates and stores probability data of the occurrence of each activity outcome in the indicia correlation table 234. Then, at step 414, the event outcome predictor 240 queries the odds buffer 224 to determine the probability of occurrence of each possible race event outcome. The probability correlator 244 then derives the predicted outcomes, at step 416, from the activity outcome probability data stored in the indicia correlation table 234 (via the activity outcome predictor 242) and the event outcome probabilities provided by the event outcome predictor 240. The wagering processor 228 then transmits the predicted outcomes to the bet allocator 230.

Once the predicted outcomes are determined, the bet allocator 230 allocates the amount bet amongst the parimutuel betting pools applicable to the indicia selection. To do so, the allocation processor 248 of the bet allocator 230 queries the activity correlation table 246 with the outcome predictions, at step 418, to determine the betting pools associated with the outcome predictions. The allocation processor 248 then obtains the probability data associated with each of the associated betting pools, at step 420, and apportions the bet amount (received from the wagering interface 236) in accordance with probability data. At step 422, the bet allocator 230 transmits the bet amounts, as apportioned in step 420, to the wagering facilities 102 for inclusion into the respective betting pools. After the wagering period expires, the wagering facilities 102 provide the wagering systems 200 with updated information on the size of each betting pool, and the number of wagers who placed on each betting pool.

After one of the race events is complete, at step 424 the wagering facilities 102 transmit to the payout processor 232 event data indicative of the actual outcome of the race event. Upon receipt of the event data by the event outcome receiver 250, at step 426 the outcome correlator 252 determines from the event data and the predicted outcomes (provided by the wagering processor 228) whether any of the wagerer's wagers were successful. If not, the payout processor 232 continues to wait, at step

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424, until all the race events upon which the wagerer has wagered have taken place. If the payout processor 232 determines, at step 428, that all of the race events have taken place, the process returns to step 400 for the entry of another wager.

On the other hand, if the outcome correlator 252 determines, at step 426, that  
5 at least one of the wagerer's wagers was successful, at step 430 the payout allocator 254 allocates a credit amount from the associated betting pool to the account buffer 226 in accordance with the size of the associated betting pool and the number of wagers placed on the betting pool. The payout processor 232 updates the account information stored on the electronic or magnetic-stripe card (if present), and then  
10 determines at step 432 whether all of the race events have taken place. If not, the process returns to step 424 and waits for receipt of the next event data. On the other hand, if the payout processor 232 determines that all the race events have taken place, the wagerer can then obtain a payout of the winnings at step 434 by removing the electronic or magnetic-stripe card from the card read/write device 210. Alternately, if  
15 no electronic or magnetic-stripe card is used, the wagerer can initiate a payout by sending a suitable command to the payout processor 232 via the touch sensitive membrane of the display 202, thereby causing a cash payout via the currency dispensing device 208. In the variation where the wagering system 200 is in communication with banking computers, the wagerer may also initiate payout to the  
20 wagerer's bank account, after the wagerer provides the payout processor 232 with the appropriate PIN and bank account number, entered via the user interface 204.

The present invention is defined by the claims appended hereto, with the foregoing description being illustrative of the preferred embodiment of the invention. Those of ordinary skill may envisage certain additions, deletions and/or modifications  
25 to the described embodiment, which although not explicitly described herein, do not depart from the spirit or scope of the invention, as defined by the appended claims.

## I CLAIM:

1. A wagering system comprising:
  - a wagering processor for processing wagers received from wagerers on wagering events, each said wager including a predicted outcome of at least one of the events and a bet amount associated with the predicted outcome;
  - a bet allocator in communication with the wagering processor for allocating each said bet amount amongst at least one of a plurality of parimutuel betting pools in accordance with the associated predicted outcome; and
  - a payout processor in communication with the wagering processor for facilitating payouts from the betting pools to winning ones of the wagerers in accordance with the predicted outcomes and actual outcomes of the events.
2. The wagering system according to claim 1, wherein the wagering processor comprises an indicia correlation table associating indicia with participants of the events, each said indicia being associated with an activity having rules for performance thereof, a wagering interface for receiving indicia selections from the wagerers, and an indicia processor in communication with the wagering interface and the indicia correlation table for deriving the predicted outcomes from the indicia selections in accordance with the rules.
3. The wagering system according to claim 2, wherein each said wagering event has a plurality of possible event outcomes and each said activity has a plurality of possible activity outcomes, and the indicia processor comprises an event outcome predictor for determining an event outcome probability associated with each said possible event outcome, an activity outcome predictor for and determining an activity outcome probability associated with each said possible activity outcome, and a probability correlator in communication with the event outcome predictor and the activity outcome predictor for deriving the predicted outcomes from the event outcome probabilities and the activity outcome probabilities.
4. The wagering system according to claim 2, wherein the wagering interface is configured for providing the wagerers with a template for facilitating performance of one of the activities in accordance with the associated rules, and for receiving the indicia selection via the template.
5. The wagering system according to claim 3, wherein the bet allocator comprises an activity correlation table associating each said betting pool with at least one of the activity

outcomes, and an allocation processor in communication with the activity correlation table for allocating each said bet amount amongst the betting pools in accordance with the associated activity outcome probabilities.

6. The wagering system according to claim 3, wherein the payout processor comprises an event outcome receiver for receiving indications of the actual outcomes, an outcome correlator in communication with the event outcome receiver for identifying the winning wagerers from the received indications and the predicted outcomes, and a payout allocator in communication with the outcome correlator for allocating the credit amounts amongst the respective winning wagerers in accordance with each said respective predicted outcome.

7. A method for facilitating wagering comprising the steps of:

receiving wagers from wagerers on wagering events, each said wager including a predicted outcome of at least one of the events and a bet amount associated with the predicted outcome;

allocating each said bet amount amongst at least one of a plurality of parimutuel betting pools in accordance with the associated predicted outcome; and

paying out credit amounts from the betting pools to winning ones of the wagerers in accordance with the predicted outcomes and actual outcomes of the events.

8. The method according to claim 7, wherein the step of receiving wagers comprises the steps of associating rules with at least one activity, each said activity being associated with indicia, associating the indicia with participants of the events in accordance with the set of rules, and for each said wager receiving a selection of the indicia, and deriving the associated predicted outcome from the indicia selection.

9. The method according to claim 8, wherein each said wagering event has a plurality of possible event outcomes and each said activity has a plurality of possible activity outcomes, and the step of associating the indicia comprises the steps of determining an event outcome probability associated with each said possible event outcome and determining an activity outcome probability associated with each said possible activity outcome, and associating the indicia with the participants in accordance with the event outcome probabilities and the activity outcome probabilities.

10. The method according to claim 8, wherein the step of receiving a selection comprises the steps of providing a template for facilitating performance of one of the activities in accordance with the associated rules, and receiving the indicia selection via the template.

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11. The method according to claim 9, wherein the step of allocating bet amounts comprises the steps of associating each said betting pool with one of the activity outcomes, and allocating each said bet amount amongst the betting pools in accordance with the associated activity outcome probabilities.
12. The method according to claim 9, wherein the step of allocating bet amounts comprises the steps of associating each said betting pool with one of the activity outcomes, and allocating each said bet amount equally amongst the betting pools.
13. The method according to claim 9, wherein the payout step comprises the steps of receiving indications of the actual outcomes, correlating the received indications with the predicted outcomes to identify the winning wagerers, associating each said winning wagerer with at least one of the betting pools in accordance with each said respective predicted outcome, and for each said betting pool allocating the credit amounts amongst the respective associated winning wagerers.

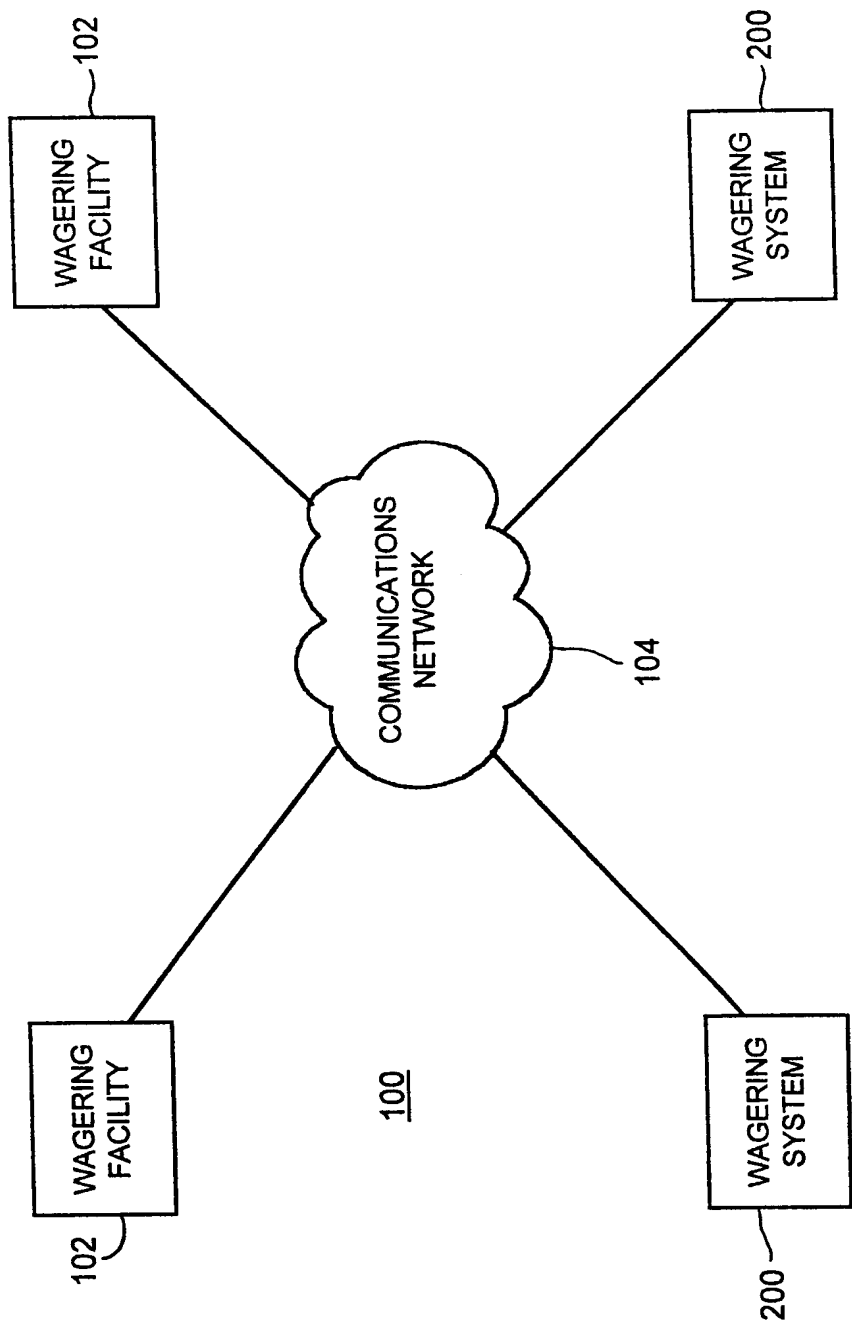
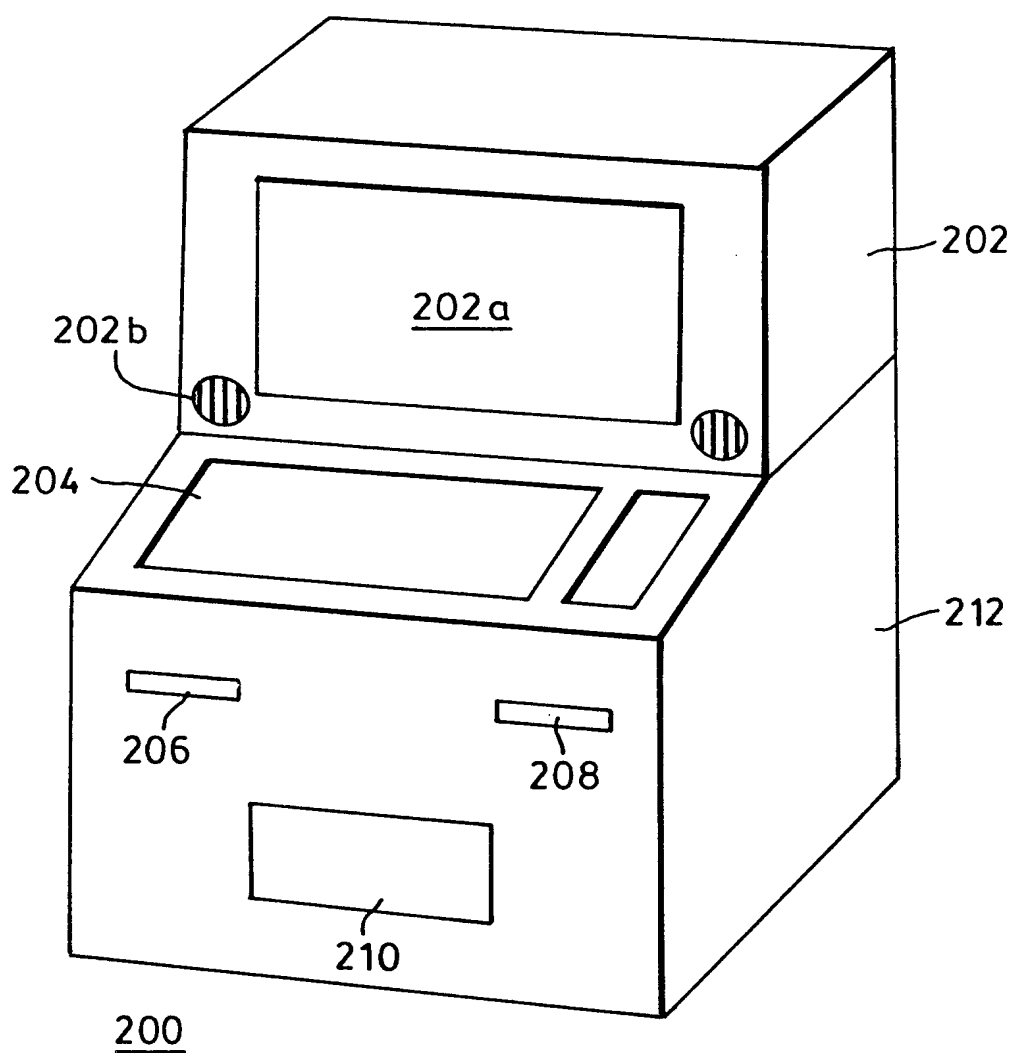


FIG. 1

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FIG. 2

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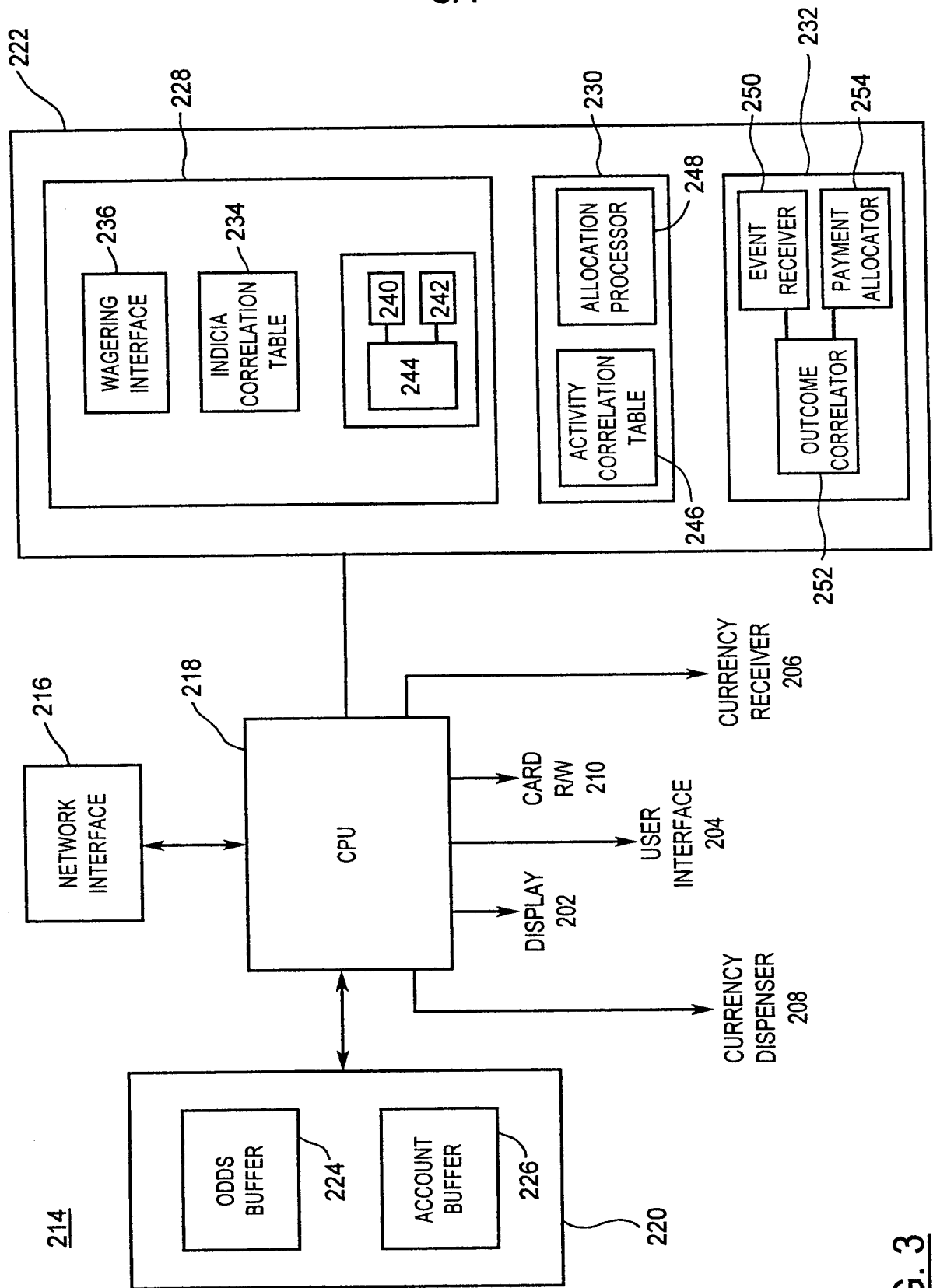


FIG. 3



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	1	2	3	4	5	6	7	8	9	
										← 304
						306				← 304
				306						← 304
										← 304

300

FIG. 4

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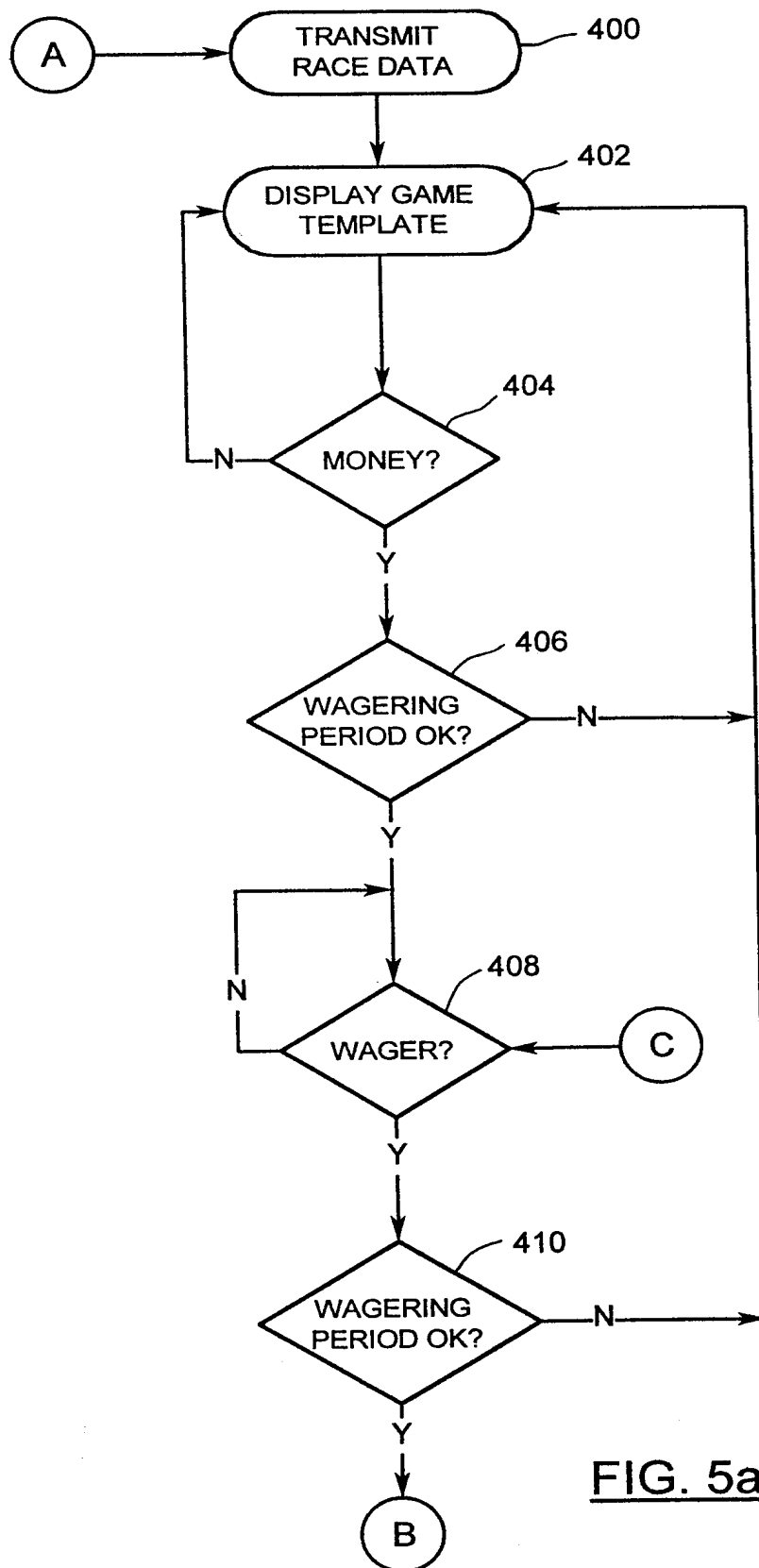
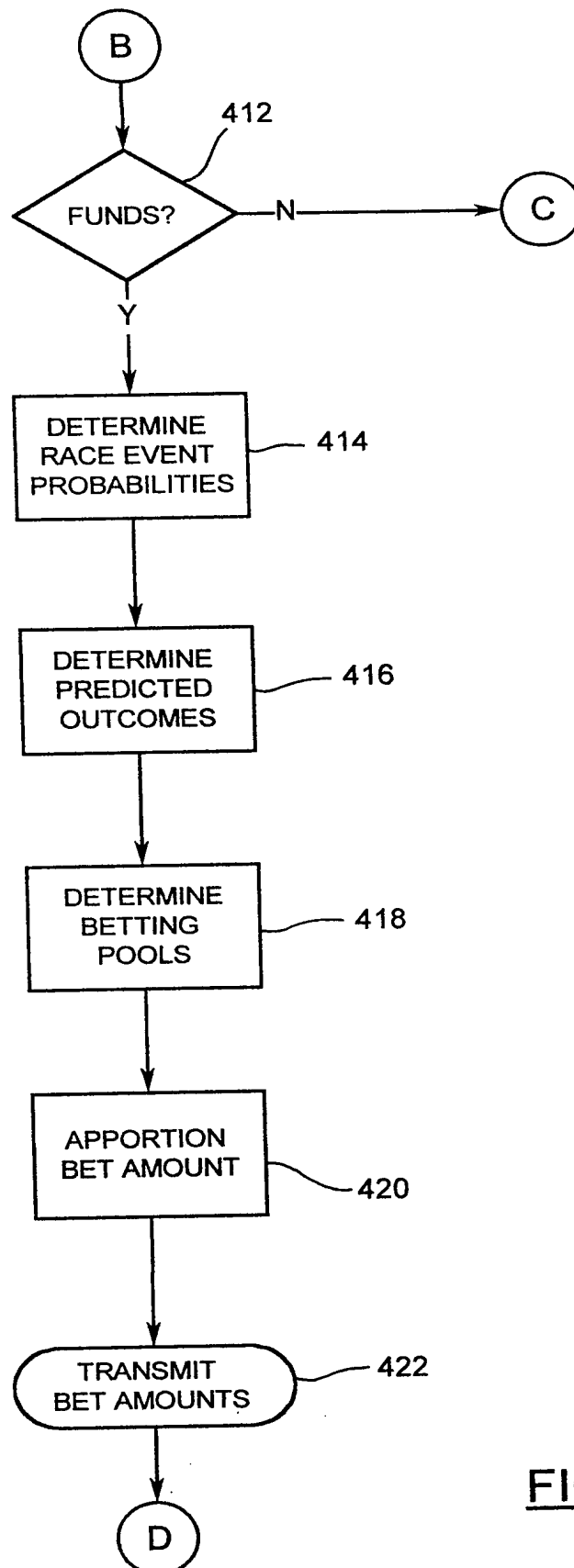
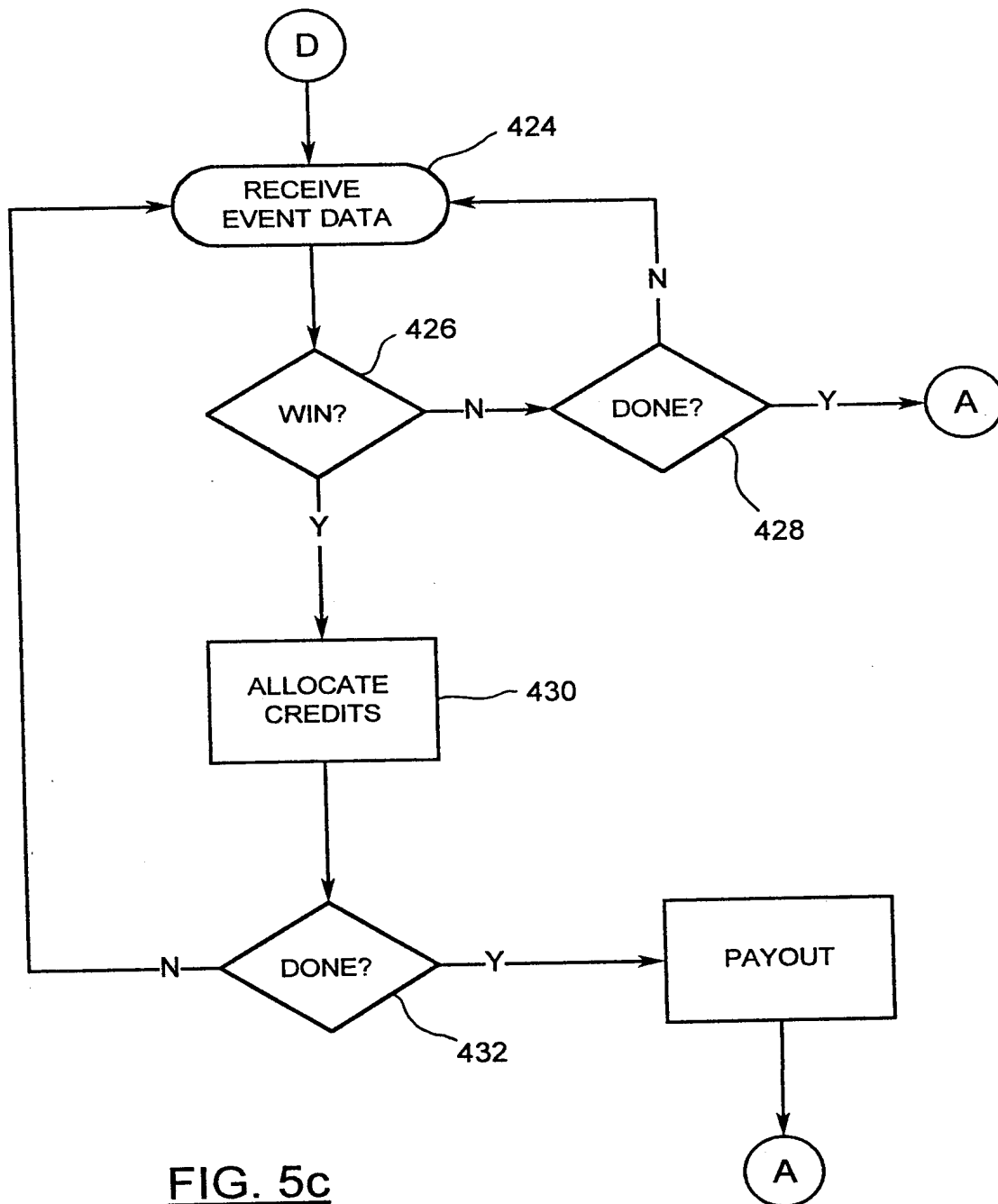


FIG. 5a

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FIG. 5b

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**FIG. 5c**

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 00/00729

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G06F17/60 G07F17/32

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 5 830 068 A (PERRY BRENT E ET AL) 3 November 1998 (1998-11-03) abstract column 2, line 30 -column 5, line 3 figures 1-6 ---	1,7 2-6,8-13
X A	US 5 743 525 A (HADDAD GEORGE N) 28 April 1998 (1998-04-28) the whole document ---	7,8 1-6,9-13
P,X	WO 00 25876 A (RACETECH L L C) 11 May 2000 (2000-05-11) abstract -----	1,7

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

27 October 2000

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 00/00729

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5830068	A	03-11-1998	AU 7235696 A	27-03-1997
			CA 2232308 A	13-03-1997
			EP 1004997 A	31-05-2000
			EP 1004998 A	31-05-2000
			EP 1004999 A	31-05-2000
			EP 1005000 A	31-05-2000
			EP 1005001 A	31-05-2000
			EP 0848846 A	24-06-1998
			NZ 319764 A	24-09-1998
			WO 9709699 A	13-03-1997
			US 6004211 A	21-12-1999
			US 6099409 A	08-08-2000
			US 6089981 A	18-07-2000
US 5743525	A	28-04-1998	AU 717057 B	16-03-2000
			AU 2843197 A	15-01-1998
			CA 2209277 A	01-01-1998
WO 0025876	A	11-05-2000	AU 1234200 A	22-05-2000